works on the nervous system are "The Brain as an Organ of Mind," "Paralyses: Cerebral, Bulbar, and Spinal," and "Aphasia and other Speech Defects." Herbert Spencer was a life-long friend, and, as one of his trustees, Dr. Bastian was joint-editor of that writer's posthumous "Autobiography." He was also a naturalist of catholic tastes, and contributed a monograph on the Anguillulidæ, a family of free nematode worms, to the Linnean Society and compiled a "Flora of Falmouth."

But it is particularly in connection with the "origins" of life that Bastian's name will be chiefly remembered. Contrary to generally accepted views, he denied that life always originates from pre-existing life, and maintained that, just as presumably in past ages life developed from non-living matter, so at the present time lowly living organisms are, under certain conditions, being generated from non-living elements. He was, in fact, an upholder of the doctrine of spontaneous generation, or, as he preferred to term it, of "archebiosis." By the use of solutions containing colloidal silica and iron, enclosed in sealed glass tubes and sterilised by heat, and maintained under particular conditions of light and temperature, he claimed that after a time micro-organisms, such as bacteria and torulæ and even moulds, developed. His results have been detailed in several papers which have appeared in the pages of NATURE during the last few years, and in "The Beginnings of Life" and "Nature and Origin of Living Matter." Few have cared to undertake the laborious investigations necessary to follow this work, which cannot be said to have been confirmed, though the MM. Mary, of Paris, and a correspondent writing only last week in the *English Mechanic*, state that they have observed the development of lowly organisms in culture tubes prepared according to his directions.

Dr. Bastian also supported the doctrine of "heterogenesis," the sudden appearance of one kind of organism as the offspring of another, *e.g.*, ciliates and flagellates descending from amœbæ. This work was published in book form under the title of "Studies in Heterogenesis." Dr. Bastian maintained his views against all opposition with a tenacity and ingenuity which won the respect of his bitterest opponents. A man of great personal charm and originality he literally died in harness, for up to three or four months ago he was continuing his investigations and planning new experiments with a vigour which showed little decline in spite of his four-score years, and to the last his interest in science he had served so well remained undimmed. R. T. H.

NOTES.

HIS MAJESTY THE KING has been pleased to approve of the following awards this year by the president and council of the Royal Society:—A Royal medal to Prof. Sir Joseph Larmor, F.R.S., for his numerous and important contributions to mathematical and physical science; a Royal medal to Dr. W. H. R. Rivers, F.R.S., for his important contributions to ethnography and ethnology. The following awards have also been made by the president and council:—The Copley medal to Prof. Ivan Petrovitch Pavlov, for his investigations in the physiology of digestion and of the higher centres of the nervous system; the Davy medal to Prof. Paul Sabatier, for his researches on contact action and the application of finely-divided metals as catalytic agents; the Hughes medal to Prof. Paul Langevin, for his important contributions to, and pre-eminent position in, electrical science.

THE Admiralty announces that Staff-Surgeon G. M. Levick has been specially promoted to the rank of Fleet Surgeon for his services with the British Antarctic Expedition in 1910.

THE council of the Royal Meteorological Society has awarded the Symons Memorial gold medal, which is presented biennially for distinguished work done in connection with meteorological science, to Dr. C. A. Angot, director, Central Météorologique de France, Paris. The medal will be presented at the annual general meeting of the society on January 19, 1916.

IN the death of Lieutenant Frank Stevenson Long, 11th Essex Regiment, British science loses a young man of great promise. Educated at Parmiter's School, he proceeded to East London College as a Drapers' Company scholar in 1906, and graduated with first-class honours in chemistry in 1909. He acted as demonstrator in the chemical department for a year, publishing his first paper on the velocity of addition of alkyl bromides to cyclic tertiary bases in the Transactions of the Chemical Society in 1911. In the same year he took honours in physics, and went to Cambridge, first as a member of the Day Training College, and successively as secretary to the censor and librarian at Fitzwilliam Hall. At the outbreak of war he had already taken the mathematical tripos in the first class, and was intending to sit for physics in the following June. With such careful preparation for his future work and with so wide an outlook, Long was regarded as a man for whom a brilliant career could safely be predicted. He obtained his commission in September of last year, and was killed in action on September 26, 1915.

A BRONZE statue of Captain R. F. Scott, R.N., subscribed for by officers of the Navy, has been erected in Waterloo Place. The statue, which shows the explorer in polar dress, is the work of Lady Scott. Mr. A. J. Balfour, First Lord of the Admiralty, in unveiling the statue on November 5, said that it was not a bad thing even in the midst of a great war to remember how great have been the performances of the British Fleet in times of peace. The statue was to commemorate the hero of one of those peaceful victories which resemble the victories of war, in that it involved danger, struggle, and an heroic death. We are apt to forget how much the Navy has done in the unwarlike and yet most dangerous work of exploration, travel, and of wresting from nature secrets most jealously held. Captain Scott was worthy to be ranked with those two great explorers whose statues stood not far off—Sir John Franklin and Captain James Cook. He had one great advantage, Mr. Balfour pointed out, over every other man whose memory is commemorated by statues. In most cases the artist has to do his best from such pictures as remain, or from the memory of friends and relatives, but Captain Scott had a happier and far rarer destiny, for his statue had been made by Lady Scott.

THE New School of Tropical Medicine and Research Laboratories in Calcutta are, according to the *Pioneer Mail* of September 8, now ready for occupation. They will be associated with the Calcutta Medical College, so that a constant supply of tropical material will be available for study, and this will be one of the main objects to which research will be directed, viz., the elucidation of disease. Another subject to which study will be devoted will be the pharmacology of Indian drugs; if we may include quinine in this category this drug must take premier place in such researches. The number of research workers at present arranged for is eight—a number by far too small, one would think, for the requirements of the many problems that present themselves for investigation. Let us mention only malaria, dysentery, cholera, kala-azar, ankylostomiasis, filariases, beri-beri. Let us consider any one of these diseases in its etiological, pathological, and therapeutic aspects, and the work before these eight researchers is immense. Further, teaching has to be carried on, which it is to be hoped that the research workers will not be called upon to undertake. However, great undertakings often have small beginnings, and we are certain that important results will soon be forthcoming as the result of this new development.

THE *Times* of November 20 published a rather flamboyant little article, headed "A Surgical Schism." This article said: "Not for half a century at least has the medical world been so sharply divided as it is to-day in regard to the question of the treatment of wounds." Now, it is exactly half a century since Lister, at Glasgow, in 1865, first ventured to treat a compound fracture by plugging the wound with a strip of rag soaked in undiluted and impure German creasote. Pyæmia and septicæmia and erysipelas were ravaging the wards of the old Glasgow Infirmary, and he, relying on Pasteur's work on the "germs of putrefaction," and knowing that creasote was a good "disinfectant," plugged a wound with it. That was the beginning of everything, exactly half a century ago. To-day, there are many methods, but they do not all contradict or exclude each other. Nobody wants to rob the soldier of his little tube of iodine, to be applied to a wound right away; nobody wants to rob him of his little packet of antiseptic or aseptic stuff for a "first dressing." But to this handy and clean use of "Listerism," many other methods have been added; the use of citrates to promote the outward flow of lymph, and the use of a vaccine against sepsis, and the use of a vaccine against tetanus. The use of drainage and drainage-tubes is centuries old, and Lister did more than most men to establish the principles of it. We must not imagine a sort of desperate squabble among our military surgeons, some of them throwing antiseptics to the dogs, and others flooding a big wound with strong antiseptics, and then stitching it up without drainage and sitting on it. The suggestion in the *Times* article that an acute controversy is proceeding upon these matters is unfortunate and misleading.

PROF. EDOUARD PRILLIEUX, member of the French Academy of Sciences, died on October 8, at the age of eighty-six, at his private residence at Malécléche, near Mondoubleau, Loir-et-Cher. To students of mycology in this country his name has been familiar since the publication in 1897 of his "Maladies des Plantes agricoles et des arbres fruitiers et forestiers causées par des parasites végétaux." This book is endeared to the student by its clear style and the refreshing presence of some hundreds of original drawings reproduced faithfully by the engraver. Prof. Prillieux entered as a student in 1850 the "Institut agronomique" at Versailles, and on leaving, his first botanical work was the study of the "powdery mildew" of the vine—that *Oidium* which was then devastating the Continental vineyards. In his book we find a beautiful and faithful drawing of the perithecial stage of this fungus, first found in France in 1892. In 1874 he was appointed professor of economic botany at the Central School of Arts and Manufactures, and two years later, when the "Institut agronomique" was reconstituted at Paris, he was appointed there to the chair of botany. In 1883 Prof. Prillieux became "inspecteur général" in the department of botany, and in 1888 was nominated director of the Laboratory of Vegetable Pathology. In 1899 he succeeded to Naudin in the membership of the Academy of Sciences. Prof. Prillieux made numerous researches into the anatomy, morphology, and physiology of plants, but it was as an investigator into the diseases of plants that he became so well known, and this entitled him to his place as one of the founders in France of plant pathology. Articles from him on this subject appeared frequently in the *Annales des Sci. nat. botanique, Comptes rendus,* and *Annal. de l'Inst. Nat. agronomique.*

IN the October number of *Mind* (New Series, No. 96) Mr. C. D. Broad discusses, in an article which is interesting and suggestive to physicists, mathematicians, and psychologists, as well as to philosophers, the question: "Is our Space Euclidean?" He shows the necessity of distinguishing clearly what we mean by space as distinct from matter, and argues that points of space and their relations are timeless, and that space must be considered as homogeneous. Nor must we conceive space as something which we analyse out of a complex presentation as we do when we distinguish in a musical note pitch and loudness, but, on the contrary, it is something we add to the experienced facts, although not in the Kantian sense of an intuitive knowledge. He shows the inherent weakness, for purposes of ultimate truth, of the common psychological distinction between perceptual and conceptual space, since in one sense all spaces are both conceptual and perceptual. By *our* space we mean a space so constructed as to enable us to deal with the data of all senses and of all men. When we ask "Is our Space Euclidean?" we mean, subject to the conditions that space is to be changeless and homogeneous and not to act on matter, and that matter is to move about in space, can we construct a system of physics which assumes Euclidean geometry for space and enables us to deal adequately and consistently with all the data that men of science agree to be most worthy to be taken into account?

IN the Annals of the South African Museum (vol. xv., part ii.), Rev. T. R. R. Stebbing publishes part 8 of his account of South African Crustacea, enumerating twenty-two species of macrurous Decapoda, half of which are described as new. In the family Hippolytidæ a new genus is founded, the name of which is the last term in a curious series of word-buildings. Risso established Lysmata, Stimpson founded Hippolysmata, and now Mr. Stebbing gives us Exhippolysmata for a species taken off the mouth of the Tugela River.

Amoeba proteus has been described and discussed in biological laboratories more fully perhaps than any protozoan. Yet Miss L. A. Carter finds several new and interesting points in its cyst, which are described and figured in the Proceedings of the Royal Physical Society of Edinburgh (vol. xix., No. 8). The cyst consists of two membranous walls outside which is an envelope formed of cemented fragments. In the reproduction of encysted individuals from seventy-five to one hundred young Amœbæ were formed by the familiar division-process.

AUSTRALIAN cattle may be affected by nodules below the skin caused by the presence of "nests" of small nematode worms (*Onchocerca gibsoni*). Dr. Georgina Sweet has lately investigated the occurrence elsewhere of such parasites (published by the Ministry of Trade and Customs, Melbourne). She finds that the identical species is present in cattle in the Malay countries, while other species of Onchocerca afflict *Bos indicus* and *B. bubalis* in India. The original host is believed to be the Indo-Malayan Gaur (*B. gaurus*), whence the parasites have been passed to cattle in the Malayan and Australian regions. Unfortunately the mode of transmission is still unknown.

SOME valuable notes on the reptiles of the Okefinokee Swamp of Florida appear in the Proceedings of the Academy of Natural Sciences of Philadelphia (vol. lxvii., part i.) by Messrs. A. H. Wright and W. G. Funkhouser. Their notes on the alligator (*Alligator mississippiensis*) are profoundly interesting. These animals are hunted for the sake of portions of their hides, and are decoyed to their doom at night by means of the glare from a lamp. As they rise to the surface, attracted by the light, they are shot. Particular attention is directed to the coloration of the young, which at first are transversely banded with bright yellow; these bands, however, slowly fade, and in the adult are wanting entirely. On the other hand, the dorsal tubercles of the neck are absent in the very young specimens. The notes on the habits of the lizards and snakes and the colour variation they present are no less valuable. Many features worthy of note are also recorded of the Chelonia of this swamp.

THE *Museums Journal* for November gives an admirable account of the newly-opened Bolling Hall Museum of Bradford. Until recently a private residence, the oldest portions of which date from the fourteenth century, it passed into the possession of the city of Bradford as a free gift from its owner, Mr. G. A. Paley. Much renovation has been done since the building came into the possession of the Corporation. Oak panelling of the seventeenth century had been painted over, ornamental ceilings were underdrawn with lath and plaster, elaborately-wrought mantelpieces had actually been covered to a dead surface with cement and painted to simulate stonework, while the original rooms had been subdivided till they were little more than cupboards. No more fitting home for a museum of archæology could be found than this, which has the further charm of standing in beautiful grounds. In this same number Mr. W. H. Mullens concludes his most readable history of the old Leverian Museum. His account of the dispersal of the collections contains some valuable facts not otherwise accessible.

Two West African cereals of some importance, known by the native names of Iburu and Fundi, are described and figured by Dr. Stapf in Kew Bulletin No. 8. Iburu, *Digitaria iburua,* is grown as a field crop in the Hausa States, N. Nigeria. The spikelets are densely packed, and a single head may contain 1000–2000 grains, which only weigh 0·7 mgr. each, and more than 40,000 go to one ounce. Fundi, *Digitaria exilis,* has been known for some time as a cultivated cereal; the heads of grain are smaller than in Iburu, and the seeds lighter, as about 53,000 seeds weigh an ounce. Fundi, however, is in much more general use by the natives. It is cooked by being thrown into boiling water or used like porridge. It seems probable that it might be appreciated as a light farinaceous food if exported to this country.

FOREST Bulletins, Nos. 27, 28, 29, contain notes on blackwood (*Dalbergia latifolia*), dhauri (*Lagerstroemia parviflore*), and sundri (*Heritiera minor*) respectively. In each bulletin a section of the timber is mounted to show the character of the wood. The text comprises details as to the general distribution of the trees and particulars of their locality and habit in India. Then follow a description of the properties and uses of the timber, an account of the natural reproduction and rate of growth of the trees, notes on the distribution in the different provinces in India, methods of extraction, etc. Sundri is a valuable timber somewhat displaced by teak. Since the sundri and teak forests are not in the same areas, the former timber has escaped the notice of traders, but if extracted it would appear, from a trial sale in Calcutta, to offer prospects of a lucrative business.

THE forests of Victoria, Australia, form the subject of an interesting paper by Mr. A. W. Hardy, read before the Field Naturalists' Club, Victoria, the first part of which is published in their journal, *The Victorian Naturalist,* vol. xxxii., No. 5, 1915. In the opening historical survey it is pointed out that there was little exploitation of the forests until about the year 1857, when the gold rush to Victoria commenced. Then a demand sprang up for timber for dwellings, culverts, fences, etc., resulting in a deplorable destruction of valuable trees. The huts built were only "wattle and daub" at first, and for these the pliable and tough branches of acacia were used. From this use the popular name wattle has been applied to the Australian acacia, and is in common use to this day. Now, with the establishment in 1907 of a proper State Department of Forests, the care of the timber is assured, and 4,000,000 acres, or 7 per cent. of the total area of the State, is a reserved forest area. An account is given of the different types of Victoria forest, which are characterised chiefly by different species of eucalyptus. Pure forests of one species of these trees are not common, though woods may often consist entirely of several different species of eucalyptus. In the highland glens of Otway and Gippsland groves of the myrtle beech (*Notofagus cunninghamii*) are to be found.

The *Journal* of the College of Agriculture, Tokyo, for March 20, 1915, contains a short article by Dr. S. Honda on the maximal growth of Japanese timber trees. Dr. Honda's article is illustrated by some excellent photographs of famous Japanese trees. The sacred tree of Arisan in Formosa (*Chamaecyparis formosensis*) attains the height of 40 metres, while the seven-forked Cryptomeria of Takaoka reaches 36 metres.

An extensive paper by Dr. S. Kusano, entitled, "Experimental Studies on the Embryonal Development in an Angiosperm," appears in the *Journal* of the College of Agriculture, Tokyo, for March 20, 1915. The paper is an elaborate study of the reproductive processes in a saprophytic orchid (*Gastrodia elata*), combining the methods of cytological study and experimental or field work, which, as the author says, "are in most cases not well co-operated." As in some other orchids, the embryo-sac has only four nuclei, instead of the usual eight. Triple fusion takes place, but no endosperm is formed. The nuclei in the embryo-sac, which ought to be haploid, are frequently found to show the diploid number of chromosomes (sixteen to eighteen). This points to the possibility of parthenogenesis (apogamy), which, however, could not be induced experimentally. The unpollinated flowers may develop dehiscent capsules and externally normal seeds, but no embryo. Development is further stimulated by certain foreign pollen (especially that of the orchid Bletia), but fertilisation is not effected. The nucleus of an unfertilised egg was sometimes observed to divide; here the nucleus was haploid, so the case was one of incipient true parthenogenesis, as distinguished from apogamy, but it goes no further. Delay in pollination favours poly-embryony, the second embryo being derived from the synergid, which would otherwise provide the "upper polar nucleus." Self-fertilisation, though a chance occurrence in Nature, is quite effective.

In the *Geographical Journal* for November (vol. xlvi., No. 5) Dr. C. Davison gives an account of the earthquakes in Great Britain from 1889 to 1914. During those twenty-six years the number of earthquakes was no fewer than 357, although not one was accompanied by crust displacements at the surface. Some years were rich in earthquakes, like 1912 with 74, or 1890 with 26, while others, like 1914, 1897, and 1899, had only one. Dr. Davison discusses at length some typical cases, and then the origin of British earthquakes in general.

The Sahara in 1915 is the subject of a useful paper by Mr. F. R. Cana in the *Geographical Journal* for November (vol. xlvi., No. 5). The summary contains a good deal of information regarding recent French exploration, which is widely scattered and not easy to lay hands on, and it concludes with a discussion of the possibilities of the land. Mr. Cana estimates that over an area of 350,000 square miles, that is, about one-tenth of the Sahara, increased cultivation is possible, and would be profitable. A good deal of well sinking has been done by the French in the Algerian Sahara, with most satisfactory results. Railway extension to some of the larger oases would increase the export of dates.

The theory that the upper layers of the atmosphere are ionised and therefore conduct electricity, first enunciated by the late Prof. FitzGerald in 1893, has been extensively utilised in recent years to explain the law of decrease of the intensity of radio-telegraphic signals with distance. In an article in the *Revue générale des Sciences* for October 30 Prof. H. Nagaoka, of the University of Tokio, attributes this ionisation to two causes. The first is the utra-violet light of the sun, which he believes is capable of ionising the atmosphere down to about 40 kilometres from the earth's surface. The second is the stream of electrons emitted by the sun, which, owing to the magnetic fields of the sun and the earth, describe paths far from straight and account for the ionisation of the upper atmosphere at night. The greater height of the reflecting layer at night and the consequent reduction in the number of reflections of the waves at the ionised layer and at the earth's surface account for the better transmission of signals at night. The under concave surface of the ionised layer above a station at which the sun is rising focuses the waves from the west near the surface of the earth, and so gives the good signals at dawn. A similar focusing of the waves from the east occurs at sunset. The effect of solar eclipses is explained in the same way, and Prof. Nagaoka points out that as the period of an electrical oscillation on the sun is 6·5 seconds, there should be a corresponding period in the stray signals at terrestrial stations. He hopes radio-telegraphic observers will succeed in detecting this period.

The October issue of *Knowledge* contains an article on "Eutectics," by J. L. Haughton and D. Hanson. In addition to a clear account of the properties and structures of these important alloys, the authors give a series of eight photographs of typical eutectics. These photographs, admirably reproduced on a large scale from various originals, are amongst the finest illustrations of the kind that have been offered to the general public. The publication of such illustrations should go far to convince those who are interested in the industrial employment of alloys that it is worth while to study their structure and to make use of the additional knowledge that has been rendered available during the past twenty years or so.

THE spontaneous racemisation of optically active compounds is discussed by S. Komatsu in the third of his "Studies in the Stereochemistry of Quinquevalent Nitrogen" (Mem. Coll. Sci., Kyoto, vol. i., No. 5, July, 1915). In the case of a typical optically-active iodide it was shown that fusion brought about the decomposition shown in the equation,

$$N(CH_3)(C_3H_5)(C_6H_5)(CH_2.C_6H_5)I \longrightarrow N(CH_3)(C_3H_5)(C_6H_5) + C_6H_5.CH_2.I.$$

On allowing the fused mass to stand for a few days the iodide was reproduced, but when purified by recrystallisation from alcohol it was completely inactive. In this way direct proof was obtained of the theory first put forward by Pope in 1899 to account for the autoracemisation of these compounds.

THE fifth part of the Memoirs of the College of Science, Kyoto (July, 1915), contains a complete investigation of the system: sodium sulphate–sodium chromate–water. It is shown that at 15° C. the decahydrates of sodium chromate and sodium sulphate are mutually miscible in all proportions. At 25°, however, the formation of these mixed crystals is limited to 34 mols. per cent. of the chromate. When more chromate is added, the mixed crystals are decomposed, and the anhydrous sulphate separates. On further addition of sodium chromate, a new salt appears, which is probably a hexahydrated chromate not possessing the power of forming mixed crystals with the sulphate at 25° C. Indications have been obtained of the possible formation of a double salt of the composition

$$2Na_2SO_4,Na_2CrO_4,30H_2O.$$

Attention may also be directed to a series of papers in part 3 of these memoirs on the alloys of (1) Sb and Te, (2) Te and Se, (3) Te and Sb, (4) Tl and Se. These include a complete investigation of each system from the point of view of the phase rule, and are illustrated by microphotographs of various alloys. The compounds detected include Sb_2Te_3, PbTe, Tl_2Se, TlSe, Tl_2Se_3, whilst Te and Se are shown to form two series of mixed crystals descending to a eutectic point at 95 per cent. Se and 130° C.

IN No. 3 of vol. i. of the Bacteriological Series of the Memoirs of the Department of Agriculture in India, Mr. N. V. Joshi claims to have isolated a new nitrite-forming organism from soil, differing morphologically from others hitherto known. Its thermal death point lies between 70° and 80° C., and its optimum temperature of action at between 25° and 35° C. An increased proportion of carbon dioxide in the atmosphere acts as a stimulus to the activity of this organism. 0·2 gm. of glucose in 50 c.c. of Omelianski's solution totally inhibits nitrite formation by this organism, and 0·2 gm. of asparagin greatly retards it. In solutions containing phosphates, ammonium chloride, ammonium sulphate, ammonium carbonate, asparagin and urea serve as sources of nitrogen; in the absence of phosphates, ammonium carbonate is the only substance which can be easily changed to nitrite.

IN a recent review of a small book called "An Introduction to Mining Science" (October 21, p. 198) it was pointed out that in this as in all works which propose to teach just such portions of science as find direct application to any branch of technology the educational benefit to be gained from a study of the science is deliberately sacrificed to expediency. One of the authors of this book has taken exception to this statement. We have no objection to putting his protest on record, but we are unable to open our columns to a discussion of the points raised by the review. Our reviewer holds—and most people will agree with him—that in teaching an art the proper understanding of which requires the knowledge of certain portions of pure science, one of two methods may be adopted: either the student may be taught the science as a systematic entity, and then taught the incidence of such portions of the science as bear upon the industry in question, or else the teaching may be restricted to such portions of the science as are required for the special purpose in view. The former method has a higher educative value than the latter, because the reasoning faculties of a student are educated by the systematic study of the science in its logical development, whilst the latter method, even though it might teach all the scientific facts that bear upon an industry, sacrifices the educative advantages of the former.

MESSRS. Longmans and Co. announce for publication in their series of *Text-books of Physical Chemistry* part ii. of "Electro-Chemistry," by Dr. E. B. R. Prideaux; "A System of Physical Chemistry," by Prof. W. C. McC. Lewis; "Practical Spectrographic Analysis," by Dr. J. H. Pollok; and "Crystallography," by T. V. Barker. In their *Monographs on Physics* will be issued, "The Emission of Electricity from Hot Bodies," by Prof. O. W. Richardson; "Electric Waves," by Prof. G. W. Pierce; and "Atmospheric Ionization," by Prof J. C. McLennan.

MESSRS. WEST, NEWMAN AND CO. have nearly ready for publication, "Vigour and Heredity," by J. Lewis Bonhote. It will be illustrated by coloured and uncoloured plates and diagrams.

OUR ASTRONOMICAL COLUMN.

THE DECEMBER METEORIC SHOWER.—This notable stream is an annually recurring one like the August Perseids, and it will be visible this year at a period when there will be little interference from moonlight. The radiant point apparently moves from near *theta* to alpha Geminorum, and the activity of the display seems prolonged over nearly three weeks. More observations are required as to the place of the radiant on successive nights. As observed by Mr. W. F. Denning at Bristol, the smoothed positions are approximately as under:—

Nov. 25	... 91+33	Dec. 6	... 104+33
26	... 92+33	7	... 106+33
27	... 93+33	8	... 108+33
28	... 95+33	9	... 109+32
29	... 96+33	10	... 110+32
30	... 97+33	11	... 111+32
Dec. 1	... 98+33	12	... 112+32
2	... 100+33	13	... 114+32
3	... 101+33	14	... 115+32
4	... 102+33	15	... 116+32
5	... 103+33	16	... 117+32